IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for interconnecting SS7 signaling points (SPs), the method comprising:

(a) connecting ~~a first interface~~ a plurality of SS7 link interface modules of an edge device to a plurality of signaling points (SPs) using a plurality of fixed-bandwidth SS7 signaling links;

(b) connecting ~~a second interface~~ an Internet protocol (IP) interface module of the edge device to an IP-capable node using a variable-bandwidth signaling link; [[and]]

(c) multiplexing call signaling messages received from the SPs received over the fixed-bandwidth SS7 signaling links, converting the call signaling messages to the IP and transmitting the multiplexed, converted call signaling messages to the IP-capable node over the variable-bandwidth signaling link, wherein multiplexing the call signaling messages includes using a message transfer part (MTP) level 3 routing function on each of the SS7 link interface modules to send the call signaling messages to the IP interface module; and

(d) at the IP interface module, receiving IP call signaling messages over the variable-bandwidth signaling link that are destined for one of the SPs, converting the IP call signaling messages to SS7 format, and forwarding the SS7-formatted call signaling messages to the SS7 link interface modules using an MTP level 3 routing function on the IP interface module.

2. (Currently Amended) The method of claim 1 wherein ~~multiplexing~~ converting the call signaling messages ~~received from the SPs~~ to IP includes encapsulating the call signaling messages in IP datagrams ~~and forwarding the IP datagrams over the variable-bandwidth signaling link~~.

3. (Currently Amended) The method of claim 2 wherein encapsulating the call signaling messages in IP datagrams includes encapsulating the messages in transport adapter layer interface packets and encapsulating the transport adapter layer interface packets in transmission control protocol (TCP) segments.

4. (Currently Amended) The method of claim 3 wherein encapsulating the call signaling messages in transport adapter layer interface packets includes adding an application-level sequence number to each transport adapter layer interface packet.

5. (Currently Amended) The method of claim 1 wherein multiplexing the call signaling messages received from the SPs includes, at the MTP level 3 routing function on each SS7 link interface module, performing message transfer part (MTP) routing for the messages to direct all of the call signaling messages to the variable-bandwidth signaling link by default.

6. (Currently Amended) The method of claim 1 wherein multiplexing the call signaling messages received from the SPs includes, at the MTP level 3 routing function on each SS7 link interface module, performing MTP routing for the call signaling messages to determine whether the messages are directed to locally-connected nodes and, in response to determining that the messages are not

directed to locally-directed nodes, routing the messages over the variable-bandwidth signaling link by default.

7. (Currently Amended) The method of claim 6 comprising, at the MTP level 3 routing function on each SS7 link interface module, in response to determining that the call signaling messages are directed to locally-connected nodes, routing the messages to the locally-connected nodes over one of the fixed-bandwidth SS7 signaling links.

8. (Currently Amended) The method of claim 6 wherein performing MTP routing on the call signaling messages includes, at the MTP level 3 routing function on each SS7 link interface module, extracting destination point code (DPC) values from the call signaling messages and comparing the DPC values to point code values stored in a routing table.

9. (Previously Presented) The method of claim 1 wherein the IP-capable node comprises an SS7/IP gateway.

10. (Previously Presented) The method of claim 1 wherein the plurality of SPs comprise service switching points (SSPs).

11. (Currently Amended) A method for interconnecting SS7 signaling points (SPs) in a mesh network, the method comprising:

(a) connecting ~~a first interface~~ first and second link interface modules of a first edge device to first and second SPs in a mesh network using first and second fixed-bandwidth SS7 signaling links;

(b) connecting ~~a first interface~~ first and second link interface modules of a second edge device to third and fourth SPs in the mesh network using third and fourth fixed-bandwidth SS7 signaling links; [[and]]

(c) connecting ~~a second~~ an IP interface module of the first edge device to ~~a second interface~~ an IP interface module of the second edge device using a variable-bandwidth signaling link[[.]];

(d) multiplexing call signaling messages received from the first and second SPs using message transfer part level 3 routing functions resident on the first and second link interface modules of the first edge device to send the call signaling messages to the IP interface module on the first edge device and, at the IP interface module, encapsulating the call signaling messages in IP datagrams and transmitting the IP-encapsulated, multiplexed call signaling messages over the variable bandwidth signaling link; and

(e) at the IP interface module on the second edge device, receiving IP-encapsulated, multiplexed call signaling messages from the first edge device, converting the IP-encapsulated, multiplexed call signaling messages to SS7 format, and forwarding the SS7-formatted call signaling messages to one of the first and second interface modules of the second edge device using a message transfer part level 3 routing function resident on the IP interface module of the second edge device.

12. (Currently Amended) The method of claim 11 wherein connecting a ~~second~~ IP interface module of the first edge device to ~~a second~~ the IP interface module of

the second edge device includes establishing a TCP/IP connection between the first and second edge devices.

13. (Currently Amended) The method of claim 11 wherein connecting the first ~~interface of a~~ first and second link interface modules first edge device to the first and second SPs includes connecting the first ~~interface~~ and second link interface modules of the first edge device to the first and second SPs using SS7 access links.

14. (Currently Amended) The method of claim 11 wherein connecting [[a]] first ~~interface~~ and second link interface modules of [[a]] the second edge device to third and fourth SPs includes connecting the first ~~interface~~ and second link interface modules of the second ~~interface~~ edge device to the third and fourth SPs using SS7 access links.

15. (Currently Amended) An edge device comprising:

(a) a first SS7 link interface module for receiving SS7 ~~message signal unit (MSUs)~~ call signaling messages from a first SS7 signaling point over a first fixed-bandwidth SS7 signaling [[links]];

(b) a second SS7 link interface module for receiving SS7 call signaling messages from a second SS7 signaling point over a second fixed-bandwidth SS7 signaling link;

[[(b)]](c) ~~a second interface for multiplexing the~~ an Internet protocol (IP) link interface module for receiving ~~SS7 MSUs received by the first interface~~ call signaling messages from first and second SS7 link interface modules, for converting the SS7 call signaling messages

to IP format, and for transmitting the ~~SS7 MSUs~~ IP-formatted call signaling messages over a variable-bandwidth signaling link; [[and]]

[[(c)]](d) [[a]] first and second message transfer part (MTP) routing ~~function~~ functions respectively located on the first and second SS7 link interface modules for determining whether the SS7 [[MSUs]] call signaling messages received by the first and second SS7 link interface modules are directed to a locally-connected SS7 signaling point, and, in response to determining that the [[MSUs]] SS7 call signaling messages are not directed to a locally-connected SS7 signaling point, for routing the messages to the ~~second~~ IP interface module to be converted to IP format and transmitted over the variable-bandwidth signaling link and thereby multiplexing the SS7 call signaling messages received over the first and second fixed-bandwidth signaling links ; and

(e) a third MTP level 3 routing function located on the IP interface module for routing inbound SS7 call signaling messages extracted from IP datagrams received by the IP link interface module and for routing the inbound SS7 call signaling messages to one of the first and second SS7 link interface modules.

16. (Currently Amended) The edge device of claim 15 wherein the first and second SS7 link interface ~~is a link interface module (LIM) having~~ modules include SS7 layer 2 and layer 3 processes.

17. (Currently Amended) The edge device of claim 15 wherein the ~~second interface is a database communications module (DCM) having~~ IP link interface module includes ~~an SS7 layer 3 process and~~ an SS7/IP converter process for converting SS7 [[MSUs]] call signaling messages to ~~TCP/IP~~ IP format and forwarding the IP-formatted SS7 [[MSUs]] call signaling messages over the variable-bandwidth signaling link.

18. (Currently Amended) The edge device of claim 17 wherein the [[DCM]] IP link interface module is adapted to forward all outgoing SS7 [[MSUs]] call signaling messages to a first SS7/IP gateway.

19. (Currently Amended) The edge device of claim 17 wherein the SS7/IP converter is adapted to encapsulate SS7 call signaling messages in transport adapter layer interface packets and to encapsulate the transport adapter layer interface packets in IP datagrams.

20. (Currently Amended) The edge device of claim 19 wherein the [[DCM]] SS7/IP converter is adapted to add an application-level sequence numbers to the transport adapter layer interface packets.

21. (Currently Amended) A method for connecting SS7 signaling points (SPs) to an IP-capable node, the method comprising:

(a) locating an edge device proximally to a plurality of SPs;

(b) connecting the edge device to the SPs using a plurality of fixed-bandwidth SS7s signaling links SS7 link, wherein connecting the edge device to the SPs using fixed bandwidth signaling links includes connecting each of the

SPs to one of a plurality of SS7 link interface modules in the edge device; [[and]]

(c) connecting the edge device to an Internet protocol (IP)-capable node located remotely from the edge device using a variable-bandwidth signaling link, wherein connecting the edge device to an IP-capable node includes connecting the edge device to an IP-capable node includes connecting the edge device to the IP-capable node using an IP interface module within the edge device;

(d) multiplexing SS7 call signaling messages received from the SPs, wherein multiplexing the SS7 call signaling messages includes using message transfer part layer 3 routing functions resident on the link interface modules to route the SS7 call signaling messages to the IP interface module, and, at the IP interface module, encapsulating the multiplexed call signaling messages in IP datagrams and transmitting the multiplexed, encapsulated call signaling messages over the variable bandwidth signaling link; and

(e) forwarding SS7 call signaling messages extracted from IP datagrams received by the IP interface module to one of the SS7 link interface modules using a message transfer part layer 3 routing function resident on the IP interface module.

22. (Currently Amended) The method of claim 21 including provisioning ~~the edge device with~~ each of the SS7 link interface modules with a simplified message transfer part routing table including routing entries containing linkset addresses

corresponding to fixed-bandwidth signaling links for messages directed to locally-connected nodes and a default entry containing a linkset address corresponding to the variable-bandwidth signaling link for messages directed to non-locally-connected nodes.

23. (Currently Amended) The method of claim 21 including provisioning ~~the edge device with~~ each of the link interface modules with a simplified message transfer part routing table including a single entry for routing all incoming messages to a linkset address corresponding to variable-bandwidth signaling link.

24. (Original) The method of claim 21 wherein connecting the edge device to an IP-capable node includes the edge device to an SS7/IP gateway.

25. (Previously Presented) A computer program product comprising computer-executable instructions embodied in a computer-readable medium for performing steps comprising:

at an edge device:

(a) receiving signaling system seven (SS7) signaling units over at least one fixed-bandwidth SS7 signaling link;

(b) filtering out predetermined first types of the SS7 signaling units received over the fixed-bandwidth SS7 signaling link;

(c) passing predetermined second types of the SS7 signaling units received over the fixed-bandwidth SS7 signaling link; and

(d) encapsulating the predetermined second types of SS7 signaling units in Internet protocol (IP) datagrams, and forwarding the IP datagrams to an IP-capable node over a variable-bandwidth signaling link.

26. (Original) The computer program product of claim 25 wherein filtering out predetermined first types of SS7 signaling units includes filtering out link status signaling units (LSSUs) received over the fixed-bandwidth SS7 signaling link.

27. (Original) The computer program product of claim 25 wherein filtering out predetermined first types of SS7 signal units includes filtering out fill-in signal units (FISUs) received over the fixed bandwidth SS7 signaling link.

28. (Original) The computer program product of claim 25 wherein filtering out predetermined first types of SS7 signal units includes filtering out fill-in signal units (FISUs) and link status signal units (LSSUs) received over the fixed-bandwidth SS7 signaling link.

29. (Original) The computer program product of claim 25 wherein passing predetermined second types of SS7 signal units includes passing message signal units (MSUs) received over the fixed-bandwidth SS7 signaling link.

30. (Original) The computer program product of claim 25 wherein receiving SS7 signal units over at least one fixed-bandwidth SS7 signaling link includes receiving the SS7 signal units at an edge device that does not have an SS7 point code.

31. (Original) The computer program product of claim 25 wherein the IP-capable node is an SS7/IP gateway.

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Previously Presented) The method of claim 10 wherein the SSPs comprise end offices.

37. (Previously Presented) The method of claim 11 wherein the SPs comprise service switching points (SSPs).

38. (Previously Presented) The method of claim 37 wherein the SSPs comprise end offices.

39. (Currently Amended) The edge device of claim 15 wherein the ~~first interface is~~ first and second SS7 link interface modules are adapted to receive the SS7 MSUs from a plurality of service switching points (SSPs) over the fixed bandwidth signaling links.

40. (Previously Presented) The edge device of claim 39 wherein the SSPs comprise end offices.

41. (Previously Presented) The method of claim 21 wherein locating the edge device proximally to a plurality of SPs includes locating the edge device proximally to a plurality of service switching points (SSPs) and wherein connecting the edge device to the SP using a fixed-bandwidth SS7 link includes connecting the edge device to the SSPs using a plurality of fixed-bandwidth SS7 signaling links.

42. (Previously Presented) The method of claim 41 wherein the SSPs comprise end offices.

43. (Previously Presented) The computer program product of claim 25 wherein receiving SS7 signal units over at least one fixed bandwidth SS7 signaling link includes receiving the SS7 signal units from a plurality of service switching points (SSPs) over a plurality of fixed-bandwidth SS7 signaling links.

44. (Previously Presented) The edge device of claim 43 wherein the SSPs comprise end offices.